Juniper Networks Design - Data Center

Duration: 5 Days **Course Code: JND-DC** **Version: 15.a** **Delivery Method: Virtual Classroom**

Overview:

This five-day course is designed to cover best practices, theory, and design principles for data center design including data center architectures, data center interconnects, security considerations, virtualization, and data center operations.

Target Audience:

This course is targeted specifically for those who have a solid understanding of operation and configuration and are looking to enhance their skill sets by learning the principles of design for the data center.

Objectives:

- **After successfully completing this course, you should be able to:**
- State high-level concepts about different data center architectures.
- Identify features used to interconnect data centers.
- Identify key high-level considerations about securing and monitoring a data center deployment.
- Outline key high-level concepts when implementing different data center approaches.
- Recommend data center cooling designs and considerations.
- Explain device placement and cabling requirements.
- Outline different data center use cases with basic architectures.
- Describe a traditional multitier data center architecture.
- Explain link aggregation and redundant trunk groups.
- Explain multichassis link aggregation.
- Summarize and discuss key concepts and components of a Virtual Chassis.
- Summarize and discuss key concepts and components of a VCF.
- Summarize and discuss key concepts and components of a QFabric System.
- Summarize and discuss key concepts and components of Junos Fusion.
- List the reasons for the shift to IP fabrics.
- Summarize how to scale an IP fabric.
- State the design considerations of a VXLAN overlay.
- Summarize and discuss the benefits and use cases for EVPN.
- Discuss the security requirements and design principles of the data center.
- Identify the security elements of the data center.
- Explain how to simplify security in the data center.
- Discuss the security enforcement layers in the data center.
- Summarize and discuss the purpose of SDN.
- Explain the function of Contrail.
- Summarize and discuss the purpose of NFV.
- Discuss the purpose and function of vSRX and vMX.
- Discuss the importance of understanding the baseline behaviors in your data center.
- List the characteristics of the Junos Space Network Management Platform and describe its deployment options.
- Describe the importance of analytics.
- Discuss automation in the data center.
- Discuss the benefits of QoS and CoS.
- State the benefits of a converged network.
- Identify general aspects of data center migration.
- Summarize and discuss best practices for migration planning.
- Outline some common migration scenarios.
- Summarize high availability design considerations in the data center.
- Provide an overview of high availability offerings and solutions in the data center

- Define the term Data Center Interconnect.
- List differences between the different Layer 2 and Layer 3 DCIs.

Prerequisites:

The following are the prerequisites for this course:

- Knowledge of routing and switching architectures and protocols.
- Knowledge of Juniper Networks products and solutions.
- Understanding of infrastructure security principles.
- Basic knowledge of hypervisors and load balancers.
- Completion of the Juniper Networks Design Fundamentals (JNDF) course.
- JNDF - Juniper Networks Design Fundamentals

Testing and Certification

- **This course is recommed training for the Juniper Networks Certified Design Specialist, Data Center (JNCDS-DC) exam**

Content:

Chapter 1: Course Introduction

Chapter 2: Overview of Data Center Design

- Initial Considerations
- Architectures and Design considerations
- Connecting Data Centers
- Security and Operation
- Implementation Considerations

Chapter 3: Initial Design Considerations

- Physical Layout and Placement
- Environmental Conditions
- Cabling Options
- Data Center Use Cases

Chapter 4: Traditional Data Center Architecture

- Traditional Multi-tier Architecture
- Link Aggregation and Redundant Trunk Groups
- Multichassis Link Aggregation
- Designing a Multi-tier Architecture Lab

Chapter 5: Ethernet Fabric Architectures

- Virtual Chassis
- Virtual Chassis Fabric
- QFabric
- Junos Fusion
- Ethernet Fabric Design Considerations
- Lab: Ethernet Fabric Architecture

Chapter 6: IP Fabric Architecture

- The Shift To IP Fabrics
- IP Fabric Routing Design
- IP Fabric Scaling
- VXLAN
- Lab: IP Fabric Architecture

Chapter 7: Data Center Interconnect

- DCI Overview
- Layer 2 DCI
- EVPN Use Cases
- Layer 3 DCI
- Lab: Interconnecting Data Centers

Chapter 8: Securing the Data Center

- Overview of Data Center Security
- Security Elements
- Simplifying Security in the Data Center
- Advanced Data Center Security
- Lab: Securing the Data Center

Chapter 9: SDN and Virtualization in the Data Center

- Designing SDN in the Data Center
- Using Contrail in the Data Center
- Using NFV in the Data Center
- Understanding How Contrail Works in the Data Center
- Working in Virtual Environments in the Data Center
- Lab: SDN and Virtualization

Chapter 10: Data Center Operation

- Understanding baseline behaviors
- Deploying Junos Space and JSA
- Understanding analytics
- Deploying automation in the data center
- Lab: Data Center Operations

Chapter 11: Traffic Prioritization for Converged Networks

- Understanding QoS, and CoS
- Converging Networks
- Lab: Prioritizing Data in the Data Center

Chapter 12: Migration Strategies

- Migration Overview
- Common Scenarios
- Migration Case Study
- Lab: Data Center Migration

Chapter 13: High Availability

- Data Center High Availability Overview
- Link Level and Physical Device Redundancy
- Device-Level Redundancy

Further Information:

For More information, or to book your course, please call us on 00 966 92000 9278

training@globalknowledge.com.sa

www.globalknowledge.com/en-sa/

Global Knowledge - KSA, 393 Al-Uroubah Road, Al Worood, Riyadh 3140, Saudi Arabia